

IN THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application.

1. (currently amended) A process for producing a layer of a composite material of metallic, intermetallic and ceramic phases by depositing the layer forming its components by means of arc wire spraying with at least one composite wire of metal or metal alloy and ceramic particles, wherein these composite wire components undergo reactions with each other during depositing forming intermetallic phases and new ceramic phases, wherein more than 70 vol. % of the ceramic particles undergo reactions during the spray processing with formation of intermetallic phases and new ceramic phases, and wherein the metal or the metal alloy of the composite wire [[,]] reacts to the extent that unreacted metal or metal alloy ~~it reacts~~, constitutes less than 10 vol.% of the formed composite material.
2. (previously presented) The process according to Claim 1, wherein additional metallic solid wire is employed, and wherein at least one of the metallic components of the solid wire reacts with a ceramic powder of the composite wire.
3. (previously presented) The process according to Claim 1, wherein the development of exothermic heat as a result of the reaction continues in part also in the newly deposited layer.
4. (previously presented) The process according to Claim 1, wherein the composite wire includes as metallic component at least Al, Ti, Ni, Fe, Co, Ni, Mo and/or W as metal or

their alloys, as well as titanium oxide, zirconium oxide, boroxide, iron oxide, nickel oxide, silicium carbide, silicium nitride and/or borocarbide as ceramic component.

5. (previously presented) The process according to Claim 1, wherein the composite wire comprises a metallic coating or jacket and a ceramic filler.
6. (previously presented) The process according to Claim 1, wherein the composite wire includes a ceramic component of 20 to 40 vol.%.
7. (previously presented) The process according to Claim 1, wherein during the arc wire spraying intermetallic phases of at least two elements from the group Al, B, Ni, Fe, Ti, Co, Mo, W, Si, B are newly formed in the spray particles.
8. (previously presented) The process according to Claim 1, wherein during the arc wire spraying in the spray particles ceramic phases of aluminum oxide, titanium carbide, titanium boride, titanium silicide and/or titanium nitride are newly formed.
9. (previously presented) The process according to Claim 1, wherein during the arc wire spray process reactive gasses are supplied, which react with at least one of the metallic components of the at least one supplied composite wire.
10. (previously presented) The process according to Claim 8, wherein the reaction with the reactive gas leads to metal oxides and/or metal nitrides.
11. (previously presented) The process according to Claim 1, wherein after the reaction to the new intermetallic phases or ceramic phases remaining free aluminum in the deposited layer is essentially converted to aluminum oxide.

12. (currently amended) A composite material of metallic, intermetallic and ceramic phases formed by depositing the layer forming its components by means of arc wire spraying with at least one composite wire of metal or metal alloy and ceramic particles, wherein these composite wire components undergo reactions during depositing forming intermetallic phases and new ceramic phases, wherein more than 70 vol. % of the ceramic particles undergo reactions during the spray processing with formation of intermetallic phases and new ceramic phases, and wherein the metal or the metal alloy of the composite wire reacts [[,]] to the extent that unreacted metal or metal alloy it reacts, constitutes less than 10 vol.% of the formed composite material.
13. (previously presented) The composite material according to Claim 12, wherein the intermetallic phases newly formed by arc wire spraying and deposited are comprised of at least two elements of the group Al, B, V, Ni, Fe, Ti, Co, Cr, Mo, W, Si or B.
14. (previously presented) The composite material according to Claim 12, wherein the intermetallic phases include titanium aluminide, titanium silicide, nickel aluminide, NiTi intermetallics, molybdenumsilicide and/or titanium boride.
15. (previously presented) The composite material according to Claim 12, wherein the ceramic phases deposited by the arc wire spraying include oxides, nitrides, carbides, silicides and/or borides.
16. (previously presented) The composite material according to Claim 12 the ceramic phases newly formed and deposited by arc wire spraying include aluminum oxide, titanium carbide, titanium silicide, titanium carbide and/or titanium nitride.

17. (previously presented) The composite material according to Claim 12, wherein a ceramic content of 10 to 70 wt.% and a content of intermetallic phases of 30 to 90 wt.%, as well as a porosity of less than 7 Vol.%.
18. (currently amended) A The composite material of metallic, intermetallic and ceramic phases formed by depositing the layer forming components by means of arc wire spraying with at least one composite wire of metal or metal alloy and ceramic particles, wherein these composite wire components undergo reactions with each other during depositing forming intermetallic phases and new ceramic phases, wherein more than 70 vol. % of the ceramic particles undergo reactions during the spray processing with formation of intermetallic phases and new ceramic phases, and wherein the metal or the metal alloy of the composite wire reacts to the extent that unreacted metal or metal alloy constitutes less than 10 vol.% of the formed composite material according to Claim 12, characterized by
- at least 50 wt.% intermetallic phases of titanium aluminides;
 - at least 20 wt.% intermetallic phases of nickel aluminides;
 - at least 20 wt.% ceramic phases of aluminum oxide; and
 - at most 5 vol.% closed porosity .
19. (previously presented) The composite material according to Claim 12, wherein it has a content of free metallic aluminum of less than 2 wt.%.
20. (previously presented) The composite material according to Claim 12, wherein it is provided deposited in a thickness of greater than 5 mm on a metallic substrate .
21. (previously presented) The composite material according to Claim 12, wherein said material constitutes a as friction layer for brake components or a wear resistant layer in motor vehicle.

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22. (previously presented) The composite material according to Claim 12, wherein said material constitutes a plating or protective layer against ballistic effect.